

**METHODS FOR IDENTIFYING GENES REGULATING**  
**DESIRED CELL PHENOTYPES**

**Abstract of the Disclosure**

5           The invention features a method for identifying a gene associated with a  
desired phenotype. This method includes the steps of: (a) providing a plurality of  
cell cultures that include plant, animal, or fungal cells capable of exhibiting a  
desired phenotype; (b) contacting each of at least a subset of said cells with a  
stimulus that (i) induces said cells to exhibit the phenotype, or (ii) does not induce  
10 said cell cultures to exhibit the phenotype; (c) determining the presence of the  
phenotype in the cell cultures of step (b); and (d) identifying a gene having  
increased expression in response to stimuli that induce the phenotype but do not  
have increased expression in response to stimuli that do not induce the phenotype.

204270-012402